process (or any other facial recognition process) that the landmark (e.g., eyes, nose, or mouth) is occluded and that the occluding object should be moved or removed and another image should be captured. Notification to the user may be, for example, via a display or a voice prompt on device **100**.

[0061] In certain embodiments, one or more process steps described herein may be performed by one or more processors (e.g., a computer processor) executing instructions stored on a non-transitory computer-readable medium. For example, process **200**, shown in FIG. **4**, may have one or more steps performed by one or more processors executing instructions stored as program instructions in a computer readable storage medium (e.g., a non-transitory computer readable storage medium).

[0062] FIG. **10** depicts a block diagram of one embodiment of exemplary computer system **510**. Exemplary computer system **510** may be used to implement one or more embodiments described herein. In some embodiments, computer system **510** is operable by a user to implement one or more embodiments described herein such as process **200**, shown in FIG. **4**. In the embodiment of FIG. **10**, computer system **510** includes processor **512**, memory **514**, and various peripheral devices **516**. Processor **512** is coupled to memory **514** and peripheral devices **516**. Processor **512** is configured to execute instructions, including the instructions for process **200**, which may be in software. In various embodiments, processor **512** may implement any desired instruction set (e.g. Intel Architecture-32 (IA-32, also known as x86), IA-32 with 64 bit extensions, x86-64, PowerPC, Sparc, MIPS, ARM, IA-64, etc.). In some embodiments, computer system **510** may include more than one processor. Moreover, processor **512** may include one or more processors or one or more processor cores.

[0063] Processor **512** may be coupled to memory **514** and peripheral devices **516** in any desired fashion. For example, in some embodiments, processor **512** may be coupled to memory **514** and/or peripheral devices **516** via various interconnect. Alternatively or in addition, one or more bridge chips may be used to coupled processor **512**, memory **514**, and peripheral devices **516**.

[0064] Memory **514** may comprise any type of memory system. For example, memory **514** may comprise DRAM, and more particularly double data rate (DDR) SDRAM, RDRAM, etc. A memory controller may be included to interface to memory **514**, and/or processor **512** may include a memory controller. Memory **514** may store the instructions to be executed by processor **512** during use, data to be operated upon by the processor during use, etc.

[0065] Peripheral devices **516** may represent any sort of hardware devices that may be included in computer system **510** or coupled thereto (e.g., storage devices, optionally including computer accessible storage medium **600**, shown in FIG. **11**, other input/output (I/O) devices such as video hardware, audio hardware, user interface devices, networking hardware, etc.).

[0066] Turning now to FIG. **11**, a block diagram of one embodiment of computer accessible storage medium **600** including one or more data structures representative of device **100** (depicted in FIG. **1**) included in an integrated circuit design and one or more code sequences representative of process **200** (shown in FIG. **4**). Each code sequence may include one or more instructions, which when executed by a processor in a computer, implement the operations described for the corresponding code sequence. Generally speaking, a computer accessible storage medium may include any storage media accessible by a computer during use to provide instructions and/or data to the computer. For example, a computer accessible storage medium may include non-transitory storage media such as magnetic or optical media, e.g., disk (fixed or removable), tape, CD-ROM, DVD-ROM, CD-R, CD-RW, DVD-R, DVD-RW, or Blu-Ray. Storage media may further include volatile or non-volatile memory media such as RAM (e.g. synchronous dynamic RAM (SDRAM), Rambus DRAM (RDRAM), static RAM (SRAM), etc.), ROM, or Flash memory. The storage media may be physically included within the computer to which the storage media provides instructions/data. Alternatively, the storage media may be connected to the computer. For example, the storage media may be connected to the computer over a network or wireless link, such as network attached storage. The storage media may be connected through a peripheral interface such as the Universal Serial Bus (USB). Generally, computer accessible storage medium **600** may store data in a non-transitory manner, where non-transitory in this context may refer to not transmitting the instructions/data on a signal. For example, non-transitory storage may be volatile (and may lose the stored instructions/data in response to a power down) or non-volatile.

[0067] Further modifications and alternative embodiments of various aspects of the embodiments described in this disclosure will be apparent to those skilled in the art in view of this description. Accordingly, this description is to be construed as illustrative only and is for the purpose of teaching those skilled in the art the general manner of carrying out the embodiments. It is to be understood that the forms of the embodiments shown and described herein are to be taken as the presently preferred embodiments. Elements and materials may be substituted for those illustrated and described herein, parts and processes may be reversed, and certain features of the embodiments may be utilized independently, all as would be apparent to one skilled in the art after having the benefit of this description. Changes may be made in the elements described herein without departing from the spirit and scope of the following claims.

What is claimed is:

1. A method, comprising:

capturing an image of a user using a camera located on a device, the device comprising a computer processor and a memory;

generating, by the computer processor, at least one landmark map based on the captured image, wherein the at least one landmark map corresponds to a landmark feature of a face of the user, wherein the at least one landmark map has a lower resolution than the captured image, and wherein the at least one landmark map includes a plurality of landmark values for regions of the captured image on the at least one landmark map, each landmark value representing a likelihood that the landmark feature is in a region;

generating, by the computer processor, an occlusion map based on the captured image, wherein the occlusion map has the lower resolution than the captured image, and wherein the occlusion map includes a plurality of occlusion values for the regions of the captured image on the occlusion map, each occlusion value representing a likelihood of occlusion in the region;